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KLYUCHEROV, A.P.; KONDRAT'YEV, S.N.; Prinimali uchastiye: GUSAROV, F.V.;
UDOVENKO, V.G.; PETROV, G.A.; BURKSER, V.Ye.; SIMONIN, I.A.;
KUDRIN, Ye.A.; GALAKHMATOV, S.N.; ZIMINA, L.P.; SHISHARIN, B.N.;
KONDYURINA, R.V.; BURMISTROV, K.A.; SHIRNIN, I.A.; SIMONENKO, F.N.;
GORSHILOV, Yu.V.; KOLPAKOV, B.V.; GUSAROV, A.K.; BOLOTOV, P.G.

Heat insulation of open-hearth furnace crowns. Metallurg 5 no.11: 14-17 N '60. (MIRA 13:10)

1. Nizhe-Tagil'skiy metallurgicheskiy kombinat.
(Open-hearth furnaces--Design and construction)
(Insulation (Heat))

KONDRAT'YEV, S.N.; KLYUCHEROV, A.P.; UDOVENKO, V.G.; SHIRNIN, I.A.;
VYDRINA, Zh.A.

Rapid methods of repair and the fritting of new hearth bottoms.
Metallurg 6 no.9:10-13 S '61. (MIRA 14:9)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat.
(Open-hearth furnaces--Maintenance and repair)

BARANOV, V.M.; DONSKOY, S.A.; TORSHILOV, Yu.V.; TRET'YAKOV, M.A.; UDOVENKO, V.G.; FREYDENZON, Ye.Z.

Blowing of cast iron in high-capacity converters. Metallurg 10 no.9: 15-18 S '65. (MIRA 18:9)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat.

ALAMPIYEV, P.M.; OMAROVSKIY, A.G.; UDOVENKO, V.G.

New features of the literature on the economic regions of the U.S.S.R. Izv. AN SSSR. Ser. geog. no.4:147-151 Jl-Ag '63. (MIRA 16:8)

(Bibliography--Geography, Economic)

DUBROV, N.F.; KITAYEV, B.I.; KOKAREV, N.I.; UDOVENKO, V.G.; KONDRAT'YEV, S.N.; ZATULOVSKAYA, Ye.Z.; KLYUCHEROV, A.P.

Review of the book by N.A.Vecher "Highly efficient operation of open-hearth furnaces." Stal' 24 no.7:613-614 Jl '64.
(MIRA 18:1)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov, Ural'skiy politekhnicheskiy institut i Nizhne-Tagil'skiy metallurgicheskiy kombinat.

ARNAUTOV, V.T.; BARANOV, V.M.; DONSKOY, S.A.; PASTUKHOV, A.I.; SMIRNOV, L.A.; TORSHILOV, Yu.V.; TRET'YAKOV, M.A.; UDOVENKO, V.G.; FREYDENZON, Ye.Z.; SHCHEKALEV, Yu.S.; Prinimali uchastiye: MAKAYEV, S.V.; KOMPANIYETS, G.M.; NAGOVITSYN, D.F.; NOVOLODSKIY, P.I.; VARSHAVSKIY, V.L.; KOROGODSKIY, V.G.; KLIBANOV, Ye.L.: MEDVEDEVSKIKH, Yu.; TALANTSEVA, T.I.; DUBROV, N.F.; DZEMYAN, S.K.; TOPYCHKANOV, B.I.; CHARUSHNIKOV, O.A.; KHARITONOV, Yu.A.

Developing and mastering the technology of converting vanadium cast iron in oxygen-blown converters with a 100 ton (Mg) capacity. Stal' 25 no.6:504-508 Je '65. (MIRA 18:6)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat (for Makayev, Kompaniyets, Nagovitsyn, Novolodskiy, Varshavskiy, Korogodskiy, Klibanov, Medvedevskikh, Talantseva). 2. Ural'skiy nauchno-issledovatel'skiy institut chenykh metallov (for Dubrov, Dzemyan, Topychkanov, Charushnikov, Kharitonov).

FREYDENZON, Yu.Z.; UDOVENKO, V.G.; TORSHILOV, Yu.V.; KOMPANIYETS, G.M.; TRET'YAKOV, M.A.; BARANOV, V.M.; NAGOVITSIN, L.F.; DONSKOY, S.A.; PASTUKHOV, A.I.

Mastering the operation of the oxygen-blown converter plant of the Nizhniy Tagil metallurgical combine. Stal' 25 no.6: 534-537 Je '65. (MIRA 18:6)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat i Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov.

VARLAMOV, V.S., kand.tekhn.nauk; IL'INA, A.I.; KUDRYASHOV, A.I., inzh.; UDOVENKO, V.S., inzh.; KOGAN, G.A., inzh.

Continuous oxidation of paraffins under industrial conditions. Masl.-zhir.prom. 25 no.10:39-41 '59. (MIRA 13:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zhirov (for Varlamov, Il'ina). 2. Shebekinskiy kombinat sinteticheskikh zhirnykh kislot i zhirnykh spirtov (for Kudryashov, Udovenko, Kogan).
(Shebekino--Paraffins)

Specific heats of saturated vapors at the boiling point. N. A. Kolosovskii and V. V. Udovenko. *J. Gen. Chem.* (U. S. S. R.) 1, 255-62(1931).—Formulas expressing latent heat of vaporization and C_p as functions of abs. temp. are given for 20 liquids (H_2O, NH_3, $CHCl_3$, CCl_4, MeOH, Me_2CO, $EtCO_2H$, C_6H_6, EtCl, EtBr, Et_2O, Me_2CHCH_2Me, C_5H_{12}, Br_2, SO_2, CS_2, EtOH, AcOMe, C_6H_{14} and C_7H_{16}). For the calcn. of sp. heat of satd. vapors the approx. thermodynamic formula $C''_s = C''_p - (\lambda/T)$ is used, where C''_s is mol. sp. heat of satd. vapor, C''_p is mol. sp. heat of the vapor at const. pressure, λ = mol. latent heat of vaporization of the liquid and T = abs. temp. This formula can be used to verify results found through the application of the exact thermodynamic formula: $C''_s = C'_s + (d\lambda/dT) - (\lambda/T)$, where C'_s = mol. sp. heat of the liquid under pressure of satd. vapor. In most cases (first 13 liquids) the agreement between the 2 formulas is satisfactory. A rule for detg. the sign of sp. heat of a satd. vapor was found and verified. This rule is $C''_s/(n - 10) > 0$, where n is number of atoms in the mol. Abs. temp. of inversion of sign of C_s was calcd. for 11 liquids as follows. H_2O, 770°; MeOH, 483°; $CHCl_3$, 355°; AcOMe, 383° and 463°; Me_2CO, 341°; EtBr, 332°; C_6H_6, 328°; CS_2, 323°; $EtCO_2H$, 308°; C_5H_{12}, 200°; Me_2CHCH_2Me, 207° and 422°; Et_2O, 282°; C_6H_{14}, 107° and 482°; EtCl, 144°.

S. L. Madorsky

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

2

Adiabatic expansion of saturated vapors and fog formation. N. A. Kolosovskii and V. V. Udovenko. *J. Gen. Chem.* (U. S. S. R.) 1, 1245-8(1031); cf. *C. A.* 36, 3078. The validity of the rule $C_v'/(n-10) > 0$, for sp. heats of satd. vapors, where C_v' is sp. heat and n no. of atoms in the mol., was established in a general way by allowing a satd. vapor to expand adiabatically from a bulb. The appearance of a fog is an indication of a neg. C_v', but when fog does not appear, the reverse is true. Fog formation was aided by ultra violet rays. Fog was observed in the following compds. in which $n < 10$: CS_2, $CHCl_3$, CCl_4, MeOH, MeCHO, nitromethane and EtOH. There was no fog formation in the following compds. in which $n > 10$: Me_2CO, EtCOCl, CHOOEt, PrOH, C_6H_6, MeCOEt, AcOEt, Et_2O, Et_2CO, C_6H_{12} and Pr_2O. S. L. Madorsky

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PROCESSES AND PROPERTIES INDEX

Specific heat of liquids. II. N. A. Kolosovskii and V. V. Udovenko. *J. Gen. Chem.* (U. S. S. R.) 4, 1027-33 (1934); cf. *C. A.* 28, 3040[1].—C_p in cals. per g. mol. at 15-30°, and temp. coeff. of entropy $(\partial S/\partial T)_p$ were detd. for a number of liquids. The following figures give C_p $(\partial S/\partial T)_p$ and temp. resp. Benzene 31.30, 0.1090, 14.76; $C_6H_5C_2H_5$ 42.73, 0.1411, 20.55; cumene 47.54, 0.1574, 28.87; limonene 59.62, 0.2032, 20.20; sabinene 60.32, 0.2031, 23.84; CCl_4 30.21, 0.1047, 15.11; C_6H_5Br 34.77, 0.1149, 20.45; C_6H_5CHO 40.93, 0.1354, 20.19; methyl ethyl ketone 39.45, 0.1205, 21.81; linalool 69.05, 0.3008, 19.95; pulegone 65.73, 0.2140, 20.18; ethyl formate 35.37, 0.1200, 21.53; ethyl butyrate 59.10, 0.1709, 24.08; butyl acetate 57.8, 0.1978, 19.30; benzyl acetate 59.78, 0.2042, 19.51; ethyl benzoate 57.84, 0.1909, 0.1955; methyl salicylate 59.46, 0.2014, 22.00; diethyl carbonate 50.28, 0.1710, 21.50; diethyl succinate 80.77, 0.2760, 19.42; ethyl acetoacetate 59.1 (?), 0.2009, 24.39; m-nitrotoluene 48.38, 0.1600, 29.19; o-toluidine 50.09, 0.1656, 29.33; m-toluidine 51.84, 0.17 (?), 29.52; dimethylaniline 51.29, 0.1696, 20.15; diethylaniline 65.58, 0.2171, 28.83; quinoline 46.13, 0.1525, 29.2 (?). A table shows a comparison of these results with those of other investigators.

S. L. Madorsky

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3RD AND 4TH ORDERS

CA

OVONENKO, V. V.

2

Viscosity of the system ketones organic acids. I. V. V. Udovenko. *J. Gen. Chem.* (U. S. S. R.) 9, 1163-6 (1939).—The viscosity and d. were detd. for binary systems contg. acetone and CCl_3CO_2H (at 35, 45, 55°), CH_2ClCO_2H (at 25, 35, 50°), HCO_2H (at 25, 35, 45°), AcOH (at 20, 30, 40°), $C_2H_5CO_2H$ (at 25, 35, 45°), resp. A chem. reaction occurs between acetone and the acids studied.

Gertrude Berend

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BC

Viscosity in the systems: ketones-organic acids. II, III. V. V. UDOVENKO (J. Gen. Chem. Russ., 1939, 9, 1512—1514, 1564—1567; cf. A., 1939, I, 606).—II. The η curves of the systems COMeEt or COMePr-HCO_2H and -AcOH, at 25°, 35°, and 45°, do not suggest compound formation. —III. Shrinkage taking place when $COMe_2$ is mixed with HCO_2H, AcOH, or $PrCO_2H$ is max. for equimol. mixtures, and increases in the order given. The same applies to the systems AcOH-COMePr, -COMeEt, and -$COMe_2$. This suggests chemical reaction between the components, although the η-composition curves furnish no evidence of it.

R. T.

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BC

A-1

Viscosity in the systems ketones-organic acids. IV. V. V. UDOVENKO and R. P. AIRAPETOVA. **V.** V. V. UDOVENKO and S. I. VITJAEVA (J. Gen. Chem. Russ., 1939, 9, 1796—1800, 1731—1733; cf. A., 1940, I, 66).—IV. The composition-η curves of the systems HCO_2H–, AcOH–, or $PrCO_2H$–C_6H_6–COMePr, at 25°, are concave to the composition axis, whilst in absence of C_6H_6 they are convex. This is ascribed to decrease in association of the acids due to dilution of the system. The curves suggest compound formation between COMePr and the org. acids to a degree diminishing in the order given.

V. Analogous results are obtained in the systems HCO_2H–, AcOH–, or $PrCO_2H$–$COMe_2$–C_6H_6, at 25°.

R. T.

ASA-SLA METALLURGICAL LITERATURE CLASSIFICATION

1. USANOVICH, M., SUMAROKOVA, T., UDOVENKO, V.

2. USSR (600)

"Electrical Conductivity, Viscosity, and Surface Tension of the System H_2SO_4-$HClO_4$," Zhur. Obshch., 9, No. 21, 1939. Lab. of Physical Chem., Central Asiatic State Univ. Received 9 June 1939.

9. [redacted] Report U-1626, 11 Jan 1952.

UDOVENKO, V.V.

BC

A 1

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Surface tension of systems ketones-organic acids. V. V. Udovenko, E. V. Sitschkova, and A. P. Toropov (J. Gen. Chem. Russ., 1939, 9, 2048—2054).—The surface tension–composition curves of the systems $COMe_2$– or COMePr–$R\cdot CO_2H$ (R = H, Me, Pr) and COMeEt–AcOH, at 25°, 35°, and 45°, deviate positively or negatively from the additive rule; these deviations are ascribed to shrinkage or dilatation of the liquids after mixing, rather than to formation of compounds. R. T.

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a-Ct

2

Cryoscopic study of the systems phenol-aniline, phenol-dimethylaniline and phenol-diethylaniline. V. V. Udovenko and M. I. Usanovich. *J. Gen. Chem.* (U. S. S. R.) 10, 17-20(1940); cf. preceding abstr.—The mol. wts. were detd. from the changes in the f. ps. of $PhNH_2$, $PhNMe_2$ and $PhNEt_2$ and their mixts. with PhOH in C_6H_6 by the method previously described. Similar procedure was used in the detn. of mol. wts. of $PhNH_2$ and its alkyl derivs. in PhOH. The inconclusive results indicate that the mol. wts. of the mixts. with PhOH in C_6H_6 are higher than the calcd. values; this can be explained by the formation of chem. compds. in the systems. The mol. wts. of anilines in PhOH decrease with increasing concn., approaching the normal values.
Chas. Blanc

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A-1

(A) Viscosity in the ternary systems: phenol-benzene-aniline, -dimethylaniline, and -diethylaniline. V. V. UDOVENKO and A. P. TOROPOV. **(B) Cryoscopic study of the systems phenol-aniline, -dimethylaniline, and -diethylaniline.** V. V. UDOVENKO and M. I. USANOVITSCH (J. Gen. Chem. Russ., 1940, 10, 11—16, 17—20).—(A) The η-composition curves suggest formation of PhOH-NH_2Ph, -$NPhMe_2$, and -$NPhEt_2$ compounds; the max. become less well-defined as the [C_6H_6] rises.

(B) The apparent mol. wt. of NH_2Ph and $NPhMe_2$ in C_6H_6 rises with increasing concn.; that of $NPhEt_2$ remains const. In PhOH the apparent mol. wt. falls with rising concn. The mean apparent mol. wt. of mixtures of PhOH and amines in C_6H_6 is > would follow from the additive rule, to a degree increasing with their concn. R. T.

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CA

Viscosity of the systems acetic acid-dimethylaniline and acetic acid-diethylaniline. V. V. Udovenko. *J. Gen. Chem.* (U. S. S. R.) 10, 1923-5(1940).—The η was detd. at 25, 45 and 65°. The mol. % of HOAc ranged up to 100. The η curves pass through a max. at all three temps. and the max. is shifted with increasing temp. to the side of HOAc, or to the less-viscous component. In dimethylaniline-HOAc the max. was 85 mol. % of HOAc and in diethylaniline-HOAc at 80 mol. % HOAc. The latter solns. were more viscous than the former. The solns. evolved heat when prepd. and in both systems the formation of chem. compds. was noted but their compn. was not detd.

B. Z. Kamich

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CA

2

Determination of molecular weight as a method of physicochemical analysis. V. V. Udovenko. *J. Gen. Chem.* (U. S. S. R.) 11, 276-84(1941).—Cryometric detns. made with mixts. of 2 components $A + B$, lead to values of a "mol. wt." of the two-component solute, defined by and calcd. from $M = g(1000K - M_0\Delta T)/g_0\Delta T$, where ΔT is the observed lowering of the f. p.; g, the wt. of the mixed solute $(A + B)$; K, M_0, g_0, the cryometric const., mol. wt. and wt. of the solvent, resp. For several mol. ratios $A:B$, the so-detd. M is plotted against the total concn. of $(A + B)$ (in mols. per 1000 g. solvent) in the soln. Next, plots of M against the mol. ratio $A:B$ are constructed, (isoconcn. lines). Measurements were made in benzene soln. for the mixed solutes: (1) Toluene-ethylbenzene: M is independent of the concn. of $(A + B)$, for the pure components as well as for the mixt.; there is only one single isoconcn. line, a straight line. (2) Methanol-ethanol: for all ratios $A:B$, the M increases with increasing concn. of $(A + B)$; the isoconcn. lines are nearly parallel straight lines. (3) Piperidine-phenyl isothiocyanate: all isoconcn. lines show a common sharp max. at $A:B = 1$, which indicates compd. formation (phenylpiperidine-thiourea, isolated and identified). (4) Methylaniline-phenyl isothiocyanate: same shape as foregoing, max. at $A:B = 1$. Systems 1 and 2 illustrate cases without chem. interaction between A and B. Moreover, in system 1, A and B are free from assocn. In system 2, both A and B are partly assocd.; the behavior of the M curves indicates that either the degree of assocn. of A and of B must remain unchanged with changing concn. or that dissocn. of A, and of B, is compensated by an assocn. AB. Systems 3 and 4 are examples of components with chem. interaction. The compd. AB is assocd., the degree of assocn. rising with increasing concn. N. T.

Mol. wt. determinations as a means of physico-chemical analysis. V. V. Udovenko (*Acta Physicochim. U.R.S.S.*, 1942, **16**, 336—347).—The variation of mol. wt. with composition is determined by the cryoscopic method and plotted in the case of MeOH–EtOH, and PhMe–PhEt mixtures in C_6H_6, to represent mixtures of similar mols. where there is no chemical interaction, and for piperidine–PhNCS and NHMePh–PhNCS mixtures, where there is interaction. The mol. wt.–composition curve is a straight line where there is no interaction, but the curve shows a max. coinciding with the composition of the compound where there is interaction. A. J. M.

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CP

2

COMMON ELEMENTS

The maximum of viscosity of irrational systems. V. V. Udovenko (Phys. chem. Lab., Middle Asiatic State Univ.). *Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk, Inst. Mashinovedeniya, Soveshchanie po Vyazkosti Zhidkostei i Kolloid. Rastvorov* (*Conf. on Viscosity of Liquids and Colloidal Solns.*) 2, 89-93(1944).--Comparison with melting diagrams has shown that in "irrational" binary systems the max. of the viscosity curves in terms of

compn. does not occur at the compn. corresponding to that of the compd. formed. The usual interpretation in terms of dissocn. of the compd. is subject to caution. A diagram of a system *A-B* involving a compd. *C* can be constructed from the part diagram *A-C*, with a max., and *C-B*. The displacement of the max. in the resulting *A-B* curve is due to interaction of the compd. *C* and the component *A* and not to dissocn. This is further borne out by the observation that the max. does not tend to draw closer to the stoichiometric compn. as the temp. approaches the m.p., which would have to be the case if the displacement were due to dissocn. in liquid phase. The shift sometimes is found to persist below the m.p. in undercooled liquid. In the system $SnCl_4$-CH_3COOH, the max. of viscosity lies at about 25% $SnCl_4$ when the compd. has the compn. 1:2 (m.p. 18.7°). In $HClO_4$-CH_3COOH, the max. lies at 67 mol. % CH_3COOH, and its position is unaffected by temp., whereas the compd. (m.p. 41°) is equimol. The same is true for the system phenol-aniline; the compd. (m.p. 30.5°) is equimol., but the max. of viscosity is at 66-67 mol. % phenol, independently of

temp. A further example of a shifted max. is $HClO_4$-H_2O. Compn. and stability of binary compds. were further investigated by cryoscopic measurements on benzene solns. of various concns. of both the pure components and their mixts. and the results represented graphically. The curves of cryoscopic mol. wt. for the system chloral-EtOH show the compd. to be stable at all dilns. and dissocn. to be absent. The max. on the curve corresponding to infinite diln. is singular (discontinuous); on the other hand, with increasing concn. of the benzene soln., the max. of mol. wt. shifts gradually towards the EtOH; this evidences interaction between that component and the chloral ethylate. With rising temp., the max. moves towards the compd. In the 2 systems phenol aniline and phenol-pyridine, the compd. is dissocd. at high dilns.; at a concn. of about 1 mole/1000 g. benzene, dissocn. is practically zero. At higher concns., the cryoscopic mol. wt. shows a max., shifted towards phenol; this again indicates interaction between the phenol and the equimol. compd. Some cases are also known where the compd. exists in the liquid phase only and therefore is not expressed in the melting diagram but only in the viscosity curve (example the system $(C_6H_5)_3CH$-$SbBr_3$).

N. Thon

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CA

2

Viscosity of the ternary systems: aniline-acetic acid-benzene, dimethylaniline-acetic acid-benzene, and diethylaniline-acetic acid-benzene. V. V. Udovenko and G. G. Yarenko. *J. Gen. Chem.* (U.S.S.R.) 10, 17-20 (1940).—The viscosities were detd. at 25° at various benzene concns. The results are given in table form and graphically. Increase of benzene concn. displaces the point of max. viscosity in the direction of the least viscous component in the 3rd system, and in the opposite direction for the 1st 2 systems. G. M. Kosolapoff

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2

Investigations of systems with formic acid. I. V. V. Udovenko and R. P. Airapetova. *J. Gen. Chem.* (U.S.S.R.) 17, 425-9(1947)(in Russian).—Viscosity, d., and cond. of solns. of HCOOH (I) in pyridine (II), in nitrobenzene (III), and in AcOH (IV) were measured at 0°, 25°, and 50°. The viscosity-concn. curves of I-II solns. show max. at about 76 mole % I at all temps. The cond. exhibits a max. at about 90 mole % I at all temps. and an inflection point at about 75 mole % I at 50°, which becomes a slight min. when the temp. is lowered to 0°. The viscosity-concn. curve of I-III solns. at 0° is S-shaped, with a max. at 86 mole % I and a min. at 41 mole % I. The S-shape becomes much less pronounced as the temp. is raised. The cond.-concn. curves for these solns. are also S-shaped, with inflection points at about 65 mole % I and without max. or min. The only other system displaying this type of curve is the $KCl-MgCl_2$ system, in which two compds. have been found, viz., $KCl.MgCl_2$ and $2KCl.MgCl_2$ (cf. *C.A.* 29, 2824[7]). The viscosity-concn. curve of I-IV solns. shows a pronounced max. at 0° at about 90 mole % I, which becomes less pronounced as the temp. is raised. The cond. curves for this system show no max. or min. and are convex towards the concn. axis. The types of chem. interaction responsible for these results are discussed. Arild J. Miller

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Investigations of systems with formic acid. II. V. V. Udovenko and R. P. Airapetova. *J. Gen. Chem.* (U.S.S.R.) 17, 665-8(1947)(in Russian); cf. *C.A.* 42, 2502b.—
Viscosity, elec. cond., and d. were studied in binary systems for formic acid (I) with Et formate (II) and with Et
ether (III). No compds. are formed in either system, but
there is a weak interaction between I and II. In the I-II
system the viscosity decreases smoothly from I to II, the
curve being concave towards the concn. axis. Values of
the viscosity at 0, 25, and 50° for I are 2.8210, 1.6372, and
0.9767; and for II, 0.5288, 0.2072, and 0.3060 centipoise.
The cond.-concn. curves are similar, except that there are
breaks in the curves at about 25 mole % II. Values of
the cond. are: I, 0.74, 1.24, 1.70; and II, 0.003, 0.003,
and 0.003×10^{-4} ohm^{-1} cm.$^{-1}$. Values of the d. are: I

1.2275, 1.2068, 1.1846; and II 0.9474, 0.9166, 0.8818 g./
cc. No breaks or max. were observed in the curves of d.,
viscosity, or cond. of I-III mixts. The viscosity-concn.
curve was similar to the I-II system. At 0 and 25°, III
has values of: viscosity 0.2966 and 0.2401 centipoises;
cond. less than 10^{-7} ohm^{-1} cm.$^{-1}$ at both temps.; d.,
0.7323 and 0.7048 g./cc.

Arild J. Miller

COMMON ELEMENTS

COMMON VARIABLES INDEX

ASA-SLA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

AUTHOR INDEX

3RD AND 4TH ORDERS

UDOVENKO, V. V.

Determination of the molecular weight as a method of physicochemical analysis. II. V. V. Udovenko and S. V. Bubak. *J. Gen. Chem.* (U.S.S.R.) **17**, 655-64(1947) (in Russian); cf. *C.A.* **35**, 0175[a].—The apparent mol. wt. *M* of a few binary systems of noninteracting components one of which is subject to assocn. was detd. by cryoscopy in C_6H_6 soln. and was plotted against the compn. for the total molalities $m = 0$ (infinite diln.), 0.5, 1.0, and 1.5 moles/1000 g. C_6H_6. In the system PhMe-MeOH, the $m = 0$ isoconcentrate is a straight line; the $m = 0.5$ curve is convex to the axis of compn., the $m = 1.0$ and 1.5 curves pass through a min. shifting to the PhMe side with rising m. In PhMe-EtOH, $m = 0$ is linear, the $m = 0.5$, 1.0, and 1.5 curves pass through a min. increasingly shifted to PhMe with rising m. In the PhMe-$PhNO_2$, the $m = 0$ isoconcentrate is again rectilinear, the other curves convex to the axis of compn., merging with the $m = 0$ line at 72 mol. % PhMe. The system PhMe-$PhNH_2$ shows the same behavior; extrapolation to $m = 0$ gives for $PhNH_2$ a value of *M* somewhat higher than the theoretical; this was reproduced in repeated detns. irrespective of addnl. purification. The linearity of *M* at infinite diln. indicates absence of assocn. The min., and its shift, is the result, on the one hand, of the decrease of *M* due to decreasing assocn. of the alc. with its increasing diln. by PhMe, and, on the other hand, to the increase of *M* with increasing PhMe content. The absence of a min. in the case of $PhNO_2$ and of $PhNH_2$ means not only lower assocn. but mainly a lesser tendency to dissocn. on diln. with PhMe.

N. Thon

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

2

CA

Determination of the molecular weight as a method of physicochemical analysis. III. V. V. Udovenko and S. F. Babak (Mid-Asiatic State Univ., Tashkent). *J. Gen. Chem.* (U.S.S.R.) 17, 1583-9(1947)(in Russian); cf. *C.A.* 42, 4384; 33, 6175[b].—Apparent mol. wts. *M* (detd. by cryoscopy in C_6H_6 soln.) of a series of binary mixts. with $CHCl_3$ are tabulated and plotted as a function of the compn. of the mixt., for four concns.: infinite diln., 0.5, 1.0, and 1.5 moles/1000 g. C_6H_6 (isoconcentrate lines I-IV). (1) In EtOH-$CHCl_3$, I is rectilinear, II convex to the axis of abscissas, III and IV pass through a min.; the lines draw close with increasing $CHCl_3$ and merge with I at 93 mole % $CHCl_3$. The diagram indicates dissocn. of assocd. EtOH mols., which is borne out by the neg. thermal effect in mixing EtOH with a large amt. of $CHCl_3$. The chem. interaction indicated by the viscosity isotherm does not appear on the *M* diagram. (2) In $PhNH_2$-$CHCl_3$, lines I-IV have a shape similar to the corresponding lines of the preceding system; the lines merge with I at 68 mole % $CHCl_3$. The presence of the min. on III and IV, compared with its absence in the system aniline-toluene, indicates increased dissocn. of assocd. aniline mols. in the presence of $CHCl_3$ as compared with toluene. (3) In $PhNO_2$-$CHCl_3$, all 4 lines are convex and merge at 80 mole % $CHCl_3$; this indicates only dissocn. (4) Me_2CO-$CHCl_3$: I is rectilinear, III-IV are slightly concave; this indicates some chem. interaction. N. Thon

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

UDOVENKO, V. V., PROF.

Solution (Chemistry)

Some problems of investigating liqid binary systems. Biul.Sredneaz.un., no. 25, 1947.

9. Monthly List of Russian Accessions, Library of Congress, November 1952, Unclassified.

UDOVENKO V. V.

PA 21/49T13

USSR/Chemistry - Heat of Vaporization Oct 48
Chemistry - Mixture

"On Heats of Vaporization of Binary Mixtures, III," V. V. Udovenko, Ts. B. Frid, Cen Asia State U, Lab Phys Chem, Tashkent, 8 pp

"Zhur Fiz Khimii" No 10

Studies vapor pressure of five systems formed by dichlorethane with alcohols: methyl and ethyl at 40, 50 and 60°, and propyl, isobutyl, and isoamyl at 50, 60, 70 and 80°. Calculates heats of vaporization of these systems at one temperature by own formula. Results agree with calculations using Clapeyron-Clausius equation. Shows that own

LC 21/49T13

USSR/Chemistry - Heat of Vaporization (Contd) Oct 48

formula can also be used to calculate heats of vaporization of real binary liquid systems. Submitted 6 Dec 47.

LC 21/49T13

PA 8/49T29

UDEVENKO, V. V.

USSR/Chemistry - Analysis, Physicochemical — Apr 48
Chemistry - Molecular Weight, Determination of

"Determination of Molecular Weight as One Method of Physicochemical Analysis, IV," V. V. Udovenko, S. F. Babak, Lab Phys Chem, Cen Asiatic State U, 6½ pp

"Zhur Obshch Khim" Vol XVIII (LXXX), No 4

Studies following systems by molecular weight method: methyl alcohol-aniline, methyl alcohol-nitrobenzene, ethyl alcohol-aniline and ethyl alcohol-nitrobenzene. Analyzes molecular weight diagrams of systems with an associated component. Submitted 2 Dec 1946.

8/49T29

[redacted]

PA 8/49T30

USSR/Chemistry - Analysis, Physicochemical Apr 48
Chemistry - Molecular Weight, Determination of

"Determination of the Molecular Weight as One Method of Physicochemical Analysis, V," V. V. Udovenko, S. F. Babak, Lab Phys Chem, Cen Asiatic State U, 5½ pp

"Zhur Obshch Khim" Vol XVIII (LXXX), No 4

Studies following systems by the molecular weight method: ethyl alcohol-acetone, aniline-acetone, aniline-nitrobenzene and ethyl alcohol-acetic acid. Shows how molecular weight diagram alters when interaction of the components occurs at the same time

8/49T30

[redacted]

USSR/Chemistry - Analysis, Physicochemical Apr 48
(Contd)

as dissociation of the associated molecules. Submitted 2 Dec 1946.

8/49T30

UDOVENKO, [redacted] V. V.

UDOVENKO, V. V.

PA 8/49T31

USSR/Chemistry - Analysis, Physicochemical Apr 48
Chemistry - Molecular Weight, Determination of

"Determination of Molecular Weight as One Method of Physicochemical Analysis, VI," V. V. Udovenko, Lab Phys Chem, Cen Asiatic State U, 7½ pp

"Zhur Obshch Khim" Vol XVIII (LXXX), No 4

Studies following systems by the molecular weight method: Chloral-methyl alcohol, chloral-ethyl alcohol, chloral-isopropyl alcohol and chloral-n-butyl alcohol. Analyzes molecular weight diagrams of systems with sharply defined chemical reaction of the components. Shows that irrational maximum is explained, not by

[redacted] 8/49T31

USSR/Chemistry - Analysis, Physicochemical (Contd) Apr 48

dissociation of the chloralcoholate, but by its reaction with the alcohol. Submitted 21 Dec 1946.

[redacted] 8/49T31

UDOVENKO, V. V.

V. V. Udovenko and Tz. B. Fried, The heats of evaporation of binary mixtures. I. P. 1136.

An equation has been derived for the heat of evaporation of binary liquid mixtures. For the calculation of this value, one has to know the heats of evaporation and the vapor pressures of the pure components and also their activity coefficients in the mixtures. The vapor pressure of three ideal systems have been studied at 50°, 60°, 70° and 80°: propyl alcohol - isobutyl alcohol, propyl alcohol - isoamyl alcohol and isobutyl alcohol - isoamyl alcohol.

Lab. of Physical Chemistry of the
Central Asiatic State University,
Tashkent
September 24, 1947

SO: Journal of Physical Chemistry (USSR) 22, No. 9, 1948

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001857820003-7"

UDOVENKO, V. D.

V. D. Udovenko and Tz. B. Fried, Heats of evaporation of binary mixtures. II. P. 1135.

This work includes the results of investigation of the vapor pressure and heat of evaporation of five systems composed of methyl, ethyl, propyl, isobutyl and isoamyl alcohols. The vapor pressure was studied by the dynamic method. The composition of the liquid and the vapor were determined refractometrically.

Central Asiatic State University,
Tashkent
December 1, 1947

SO: Journal of Physical Chemistry (USSR) 22, No. 9, 1948

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

2

Heats of vaporization of binary mixtures. III. V. V. Udovenko and Ts. B. Frid. *Zhur. Fiz. Khim.* (J. Phys. Chem.) 22, 1263-70(1948); cf. *C.A.* 43, 4704.—The compn. and pressure P of the satd. vapor of 5 binary systems contg. dichloroethane (I) was detd. at 40, 50, and 60° for MeOH and EtOH and at 50, 60, 70, and 80° for PrOH, iso-BuOH, and iso-AmOH. The P of I was 180, 233.5, 350, 493, and 678.2 mm. Hg at 40, 50, 60, 70, and 80°, resp. At 50°, when the mole fraction x of the alc. in the liquid was 0.1, 0.4, 0.7, and 1.0, its mole fraction in the vapor and P were: for MeOH 0.478 and 404.2, 0.603 and 493.2, 0.657 and 501.4, and 1.0 and 422.0; for EtOH 0.330 and 315.7, 0.423 and 350.8, 0.501 and 376.3, and 1.0 and 223.0; for PrOH 0.106 and 246.0, 0.195 and 258.0, 0.317 and 196.5, and 1.0 and 87.0; for iso-BuOH 0.072 and 224.0, 0.130 and 216.0, 0.234 and 173.1, and 1.0 and 86.0; and for iso-AmOH 0.018 and 219.6, 0.064 and 182.8, 0.096 and 180.0, and 1.0 and 17.5. P has a max. in all systems except I + iso-AmOH; it is observed at greater x the higher the temp. The heat of vaporization of these systems calcd. according to the earlier equation, cf. *loc. cit.*, agrees with that calcd. from the equation of Clapeyron and Clausius. The former equation can be used also for nonideal systems in which the coeff. of activity varies with temp. J. J. B.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

UDOVENKO, V.V., TOROPOV, A.P. and OSININA, M.Ye.

Udovenko, V.V. - "Conductometric titration of anabasine," Doklady Akad. nauk UzSSR, 1949, No. 1, p. 7-10 --- Summary in Uzbek

SO: U-3566, 15 March, 53, (Letopis 'Zhurnal 'nykh Statey, No. 14, 1949).

UDOVENKO, V. V.

Ayrapetova, R. P., Granitova, C. I., and Udovenk , V. V. - "Physical-chemical investigation of a formic acid-phenol system", Doklady Akad. nauk UzSSR, 1949, No. 2, p. 13-20, (Resume in Azerbaijani), - Bibliog: 14 items.

SO: U-4392, 19 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 21, 1949).

UDOVENKO, V. V.

"Research on a system with formic acid IV." Udovenko, V. V. and Airapetova, R. P. (p.632)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii) 1949, Vol. 19, No. 4.

UDOVENKO, V. V.

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
Inorganic Chemistry

Complex compounds of anabasine with cobalt salts. T. I. Sushkevich and V. V. Udovenko (Mid-Asiatic State Univ., Tashkent). *Doklady Akad. Nauk Uzbek. S.S.R.* 1949, No. 3, 18-20(in Russian).—Addn. of anabasine to aq. $CoCl_2$, with cooling, followed by addn. of HCl to dissolve the greenish ppt. of hydrated Co, gave blue $CoCl_2.C_{10}H_{14}N_2.2HCl$, m. 283°, when an excess of HCl was used, or the corresponding $CoCl_2.C_{10}H_{14}N_2.HCl$, m. 303°, with the correspondingly smaller amount of HCl. Both are sol. in H_2O, insol. in usual org. solvents, except for hot HCO_2H; both are electrolytes in aq. soln., and the cond. indicates complete dissocn. in soln. of the di-HCl salt with 6 ions being formed; the mono-HCl salt is a weak electrolyte. Anabasine also forms complexes with $CuCl_2$ and $MnCl_2$, which are not described. G. M. Kosolapoff

MF
7-27-54

1

CA

Determination of molecular weight as a method of physicochemical analysis. V. V. Udovenko (Central Asia State Univ., Tashkent, U.S.S.R.). *Izvest. Sektora Fiz.-Khim. Anal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* 17, 101-18(1949).—The use of the method is illustrated on MeOH and EtOH in C_6H_6. On the abscissa is plotted the concn. of the alc. in C_6H_6 expressed as mols. of alc. per 1000 g. of C_6H_6 and on the ordinate the apparent mol. wt. A family of curves is obtained of which the lowest curve is that of MeOH and the upper one of EtOH at various concns. in C_6H_6. Between these two are the curves of alc. mixts. taken in various proportions but of the same total concn. in C_6H_6. Extrapolation to the ordinate, i.e. at zero concn., gives the mol. wt. of infinitely dil. soln. On the basis of this diagram is plotted a diagram of compn.-mol. wt. on which MeOH-EtOH compn. is the abscissa and the mol. wt. the ordinate. The family of curves (straight lines) thus obtained are isoconcentrates in which the lowest is at zero concn. and the others at increasingly higher concns. By this method were obtained compn.-mol. wt. curves for a no. of systems. In the system toluene-ethylbenzene, the components do not react with each other and the mol. wt. of the pure components as well as of their mixt. does not change with their concn. in C_6H_6. Therefore, all the isoconcentrates coincide and on the diagram appears one straight line. In the system toluene-MeOH, the latter is an assocd. compd. and its degree of assocn. depends on its concn. in C_6H_6 or in its mixt. with toluene. Thus, at zero concn. of MeOH, the isoconcentrate is a straight line and as its quantity increases the curves bend toward the abscissa. Similarly are discussed the diagrams of toluene-aniline, nitrobenzene-EtOH, acetone-EtOH, phenol-pyridine, formic acid-Et_2O, methylaniline-phenylisothiocyanate, and chloral-EtOH.

M. Hosch

2

CA

Systems with formic acid. V. V. Udovenko and R. P. Airapetova. *Zhur. Obshchei Khim.* 19, 137-44; *J. Gen. Chem. U.S.S.R.* 19, 143-8(1949) (English translation); cf. *C.A.* 42, 3680h.—Mol. wts. were detd. for various mixts. of HCOOH (I) with $PhNO_2$ (II), AcOH (III), EtOOCH (IV), and Et_2O (V). The solvent used in the mol.-wt. detns. was C_6H_6. Graphs are given showing mol. wt. vs. concn. of I (in mole %) for 4 different total concns. of dissolved substances, viz., 0.0, 0.5, 1.0, and 1.5 moles per 1000 g. of C_6H_6. The values graphed were extrapolated or interpolated from the exptl. results. In all cases the curves are displaced towards higher mol. wts. by increasing the total concn. In the system I-II, the mol. wt.-concn. curve for the 0.5 molal case is linear, extending from (approx.) 96 for I to 129 for II. In the other three cases the curves are linear in the range 0-80 mole % I. From 80 to 100 mole % I, the 0.0 molal curve is concave, and the 1.0 and 1.5 molal curves are convex, toward the concn. axis, giving values for the mol. wt. of I of, resp., 84, 95, and 115. In the system I-III, all the mol. wt.-concn. curves are linear, the 0.5 molal curve, e.g., extending from a mol. wt. of about 97 for I to about 128 for III. With increasing total concn. the slopes of the lines decrease. In the systems I-IV and I-V the curves all show max. In the I-IV system, the 0.5 molal curve rises from a mol. wt. of 95 for I to a max. of 100 at 80 mole % I, and then drops to 78 for IV. The sharpness of the max. increases with increasing total concn. In the I-V case, the 0.5 molal curve rises from a mol. wt. of 96 for I to a max. of 106 at 80 mole % I and then drops to 78.2 for V. The mol. wt. of pure V changes less with concn. than that of any other pure substance or soln. investigated, and there is no consistent trend, whereas the mol. wt. of all other substances increased with increasing total concn. Arlid J. Miller

UDOVENKO, V. V.

58/49T24

USSR/Chemistry - Chloral Jan 49
Chemistry - Viscometric Analysis

"Viscosity of Systems of Chloral With Alcohols," V. V. Udovenko, Ye. I. Kalavanovskaya, M. F. Propkop'yeva, Lab of Physicochem, Cen Asiatic State U, 3 1/4 pp

"Zhur Obshch Khim" Vol XIX, No 1

Tabular studies of viscosities and densities of the system of chloral and methyl alcohol at 40, 60, and 75° and the system of chloral and isoamyl alcohol at 40, 60, and 80° show maximum viscosity of the systems is invariably

[redacted] 58/49T24

USSR/Chemistry - Chloral (Contd) Jan 49

affected by the alcohol, regardless of the value for the viscosity of the chloral. Submitted 29 Sep 47.

[redacted] 58/49T24

UDOVENKO, V. V. PA 67/49T44

USSR/Chemistry - Anabasine May 49
Acids, Mineral

"Reaction of Anabasine With Mineral Acids," V. V. Udovenko, L. A. Vvedenskaya, Lab of Physicochem, Cen Asia State U, 1 3/4 pp

"Zhur Obshch Khim" Vol XIX, No 5

Derives the crystalline compounds of anabasine with hydrogen chloride and nitric acid, respectively: $C_{10}H_{14}N_2 \cdot HCl$ and $C_{10}H_{14}N_2 \cdot HNO_3$. Submitted 28 Mar 48.

[redacted] 67/49T44

CA

Systems with formic acid. IV. V. V. Udovenko and R. P. Airapetova. *Zhur. Obshchei Khim.* 10, 632-5; *J. Gen. Chem. U.S.S.R.* 10, 585-6(1940)(English translation); cf. preceding abstr.—Mol. wts. were detd. for various mixts. of formic acid (I) with acetone (II), 2-butanone (III), and 2-pentanone (IV). As in the previous article, curves are shown for mol. wt. vs. concn. for total concns. of dissolved substances equal to 0.0, 0.5, 1.0, and 1.5 moles per 1000 g. benzene. In the system I-II, the 0.0 and 0.5 molal curves are concave towards the concn. axis, whereas the 1.0 and 1.5 molal curves go through a max. at 90 mole % I. For the 1.0 molal case, e.g., values of concn. of I (mole %) and mol. wt. are, resp.: 100, 107; 90, 108; 63, 102; 32, 90; 0.0, 65. In the system I-III, the curves at all total concns. go through a max. at about 75 mole % I, the 1.0 molal curve going from a mol. wt. of 107 for I, through a max. of 110, then dropping to 74 for III. The system I-IV is similar, the 1.0 molal curve rising from a mol. wt. of 107 for I to a max. of 118 at 70 mole % I, and dropping to 89 for IV. The max. in these curves are attributed to chem. interaction among the components in the various systems. A. J. M.

UDOVENKO, V.V

Viscosimetry in physicochemical analysis. Trudy SAGU no.15:3-16 '50. (MLRA 9:5)

(Viscosimetry) (Chemistry, Analytical)

C.A.

Viscosity and density of binary systems with nicotine. III. S. P. Babak and V. V. Udovenko (Samarkand Med. Inst.). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 20, 1508-71 (1950); cf. *C.A.* 44, 6220i. The nicotine-o-nitrophenol system shows a compd., *nicotine*$\cdot$*2*$C_6H_4(OH)NO_2$. Viscosity of the system shows a max. at the above compn.; the highest max. is at 25° 8.0113 centipoises, lower max. at 50° 4.3888, and at 75° 2.0000. Density-compn. curves are smooth curves of linear type going from 0.9986 at 25° and 100 mol.% nicotine to 1.2515 at 15.63 mol.% nicotine, at 50° from 0.9866 to 1.2851 at 0.0% nicotine, and at 75° from 0.9670 to 1.2570 at 0.0% nicotine. The nicotine-$PhNO_2$ system shows a linear viscosity relation: at 25° ranging from 1.7687 (0.0% nicotine) to 3.8042, at 50° from 1.1925 to 2.0376, at 75° from 0.8406 to 1.2626; values of d. similarly range from 1.2003 to 1.0068, from 1.1718 to 0.9866, and from 1.1480 to 0.9670, resp. The system with o-$MeC_6H_4NO_2$ has linear viscosity relations: at 25° from 2.0887 (0% nicotine) to 3.8042 (100%), at 50° from 1.3477 to 2.0376, at 75° from 0.9730 to 1.2626; d. varies similarly: from 1.1578 to 1.0068, from 1.1313 to 0.9866, from 1.1000 to 0.9670, resp. The system with p-$MeC_6H_4NO_2$ has a linear viscosity relation: at 25° from 2.8022 (41.68 mol.% nicotine) to 3.8042 (100%), at 50° from 1.2908 (0%) to 2.0376 (100%), at 75° from 0.8088 (0%) to 1.2626 (100%); d. varies similarly: from 1.0703 to 1.0068, from 1.1223 to 0.9866, from 1.1013 to 0.9670, resp. G. M. K.

CA

2

The viscosity and density of binary systems with nicotine. III. S. F. Babak and V. V. Udovenko (Samarkand Med. Inst.). *J. Gen. Chem. U.S.S.R.* 20, 1629-32(1950) (Engl. translation).—See C.A. 45, 930d. R. M. S.

CA

Viscosity of binary solutions with nicotine. IV. S. F.
Babak and V. V. Udovenko (Samarkand Med. Inst.).
Zhur. Obshchei Khim. ~~20,~~ 2121-3(1950); *J. Gen. Chem.*
U.S.S.R. **20**, 2199-2201, 2203-5(Engl. translation); cf.
C.A. **46**, 4972*d*.—η and d. were detd. for solns. of nico-
tine (I) with CCl_4 at temps. of 25, 35, and 50°, and with
1,2-dichloroethane, PhCl, and PhBr at temps. of 25,
50, and 75°. There is no indication of any chem. in-
teraction between the components in any case. The η-
concn. curves in each of the 4 systems is a straight line
at the highest temp. studied, but becomes increasingly
convex towards the concn. axis with decreasing temp. In
the system I-CCl_4, e.g., values of mole % I, d., and η, resp.,
are: 25°: 0.00, 1.5782, 0.9240; 25.80, 1.3773, 1.5456;
50.38, 1.2263, 2.2747; 75.70, 1.1004, 3.0763; 100.00,
1.0068, 3.8942; at 50°: 0.00, 1.5201, 0.6667; 37.70,
1.2890, 1.2156; 75.70, 1.0773, 1.7311; 100.00, 0.9866,
2.0870. Similar values at 25° for the remaining systems
are: I-1,2-dichloroethane: 0.00, 1.2846, 0.7640; 25.33,
1.1495, 1.2360; 50.00, 1.0835, 1.8280; 77.10, 1.0328,
2.6010; I-PhCl: 0.00, 1.0081, 0.7124; 25.87, 1.0678,
1.2057; 50.03, 1.0439, 1.8380; 72.10, 1.0237, 2.8972.
I-PhBr: 0.00, 1.4936, 1.0619; 25.14, 1.3301, 1.5435;
48.72, 1.2074, 2.1009; 74.67, 1.0915, 2.9070. V. *Ibid.*
2124-6.—η and d. were detd. at 25, 35, and 50° for the
system I-acetone, and at 25, 50, and 75° for the systems
I-MeCOEt and nicotine-acetophenone (II). The first 2
systems have η-concn. curves similar to those mentioned in
part IV except that even at the highest temp. investi-
gated the curves are still convex towards the concn.
axis. For the system I-II the curves are S-shaped, with the
curvature decreasing with increasing temp. Values for
mole % nicotine, d., and η, resp., at 25° are as follows:
I-acetone: 0.00, 0.7818, 0.3332; 24.98, 0.8873, 0.6975;
50.05, 0.9488, 1.2707; 74.85, 0.9797, 2.2737; 100.00,
1.0068, 3.8942; I-MeCOEt: 0.00, 0.8004, 0.4004; 24.63,
0.8822, 0.7187; 48.78, 0.9395, 1.2459; 73.74, 0.9861,
2.2002; I-II: 0.00, 1.0242, 1.6179; 24.20, 1.0222, 2.1978;
49.34, 1.0162, 2.9460; 74.31, 1.0118, 3.6271.

Arild J. Miller

PASOVSKAYA, G.B.; UDOVENKO, V.V.

Simplified methods for the determination of alkali metals in presence of magnesium. Trudy SAGU no.27:81-88 '51. (MLRA 9:5)
(Alkali metals) (Conductiometric analysis)

PASOVSKAYA, G.B.; UDOVENKO, V.V.

Conductometric simultaneous determination of magnesium and alkali metals. Trudy Kom. anal. khim. 4:196-204 '52. (MIRA 11:6)
(Magnesium)
(Alkali metals)
(Conductometric analysis)

UDOVENKO, V. V.

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
Analytical Chemistry

8

3

Conductometric determination of potassium with sodium picrate. V. V. Udovenko and G. B. Pasovskaya (Central Asian State Univ., Tashkent). J. Anal. Chem. (U.S.S.R.) 7, 181-2(1952)(Engl. translation).—See C.A. 47, 1536i.
H. L. H.

MF
11-4-54

UDOVENKO, V., FATULINA, L. G.

Solubility

Solubility in the system ethyl alcohol - 1,2-ethylene dichloride - water. Zhur.fiz.khim., 16, No. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952. Unclassified.

UDOVENKO, V. V.

Udovenko, V. V., Airapetova, R. P., Malakhova, V. T.- "Physico-chemical analysis of the systems: phenol-monochloro-acetic acid, and phenol-trichloroacetic acid." (p. 1759)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1952, Vol. 22, No. 10

UDOVENKO, V. V.

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Chemical Abst.
Vol. 48 No. 9
May 10, 1954
General and Physical Chemistry

3 Chem

Physicochemical analysis of the systems phenol-monochloroacetic acid and phenol-trichloroacetic acid. V. V. Udovenko, R. P. Airapetova, and V. T. Malakhova. J. Gen. Chem. (U.S.S.R.) 22, 1801-2(1952)(Engl. translation). —See C.A. 47, 2028f. H. L. H.

UDOVENKO, V.V.

3 Chem

Chem abs V48
1-25-54
Inorganic Chemistry

Some compounds of pyridine with cupric chloride. V. V. Udovenko and E. M. Osipova (Mid-Asiatic State Univ., Tashkent). *Zhur. Obshchei Khim.* 22, 2005-7(1952).—Equimol. amts. of anhyd. $CuCl_2$ and C_5H_5N, in abs. alc. or dry Me_2CO form light-blue $CuCl_2.2C_5H_5N$ (I), which slowly (in a few hrs.) changes into gray $CuCl_2.C_5H_5N$ (II). With HCl, I forms I.2HCl, yellow prisms, and dark brown crystals of $3CuCl_2.2C_5H_5N.2HCl.2H_2O$ (III). This reaction can take place in moist HCl vapor, but not in dry HCl gas. II is not sol. in org. solvents; in H_2O, it is decompd. into I and $CuCl_2$. Heated above 200°, I loses C_5H_5N becoming anhyd. $CuCl_2$. III is obtained from aq. solns. contg. strictly stoichiometric amts. of $CuCl_2$ and C_5H_5N and an excess of HCl; without excess HCl, only II is pptd., but it redissolves in excess HCl and, on evapn., gives III, which can be recrystd. from H_2O. In alc., III decomp. to I, and in Me_2CO to I.2HCl, insol. in C_6H_6, CCl_4, etc. III m. 104-5° (decompn.). In air, III loses H_2O and HCl, becoming $3CuCl_2.2C_5H_5N$ (IV), a light-green powder, which cannot be obtained directly from $CuCl_2$ and C_5H_5N. In H_2O, IV decomp. to I. With HCl, it forms III. It is stable in air at room temp., decomp. above 100°, and m. 272-3° (decompn.). Blue $CuCl_2.6C_5H_5N$ was obtained with $CuCl_2$ and a large excess of C_5H_5N, within 10 days at a temp. not over 12-15°, faster at −10°. N. Thon

UDOVENKO, V. V.

Chemical Abst.
Vol. 48 No. 9
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Inorganic Chemistry

2 chem

Some compounds of pyridine with cupric chloride. V. V. Udovenko and E. M. Osipova. *J. Gen. Chem. U.S.S.R.* 22, 2141-50(1952)(Engl. translation).—See *C.A.* 48, 490b. H. L. H.

9-2-54
gff

General & Phy. Chemistry 2

CA

Solubility in the system ethyl alcohol-1,2-dichloroethane-water. V. V. Udovenko and L. G. Fatkulina (Sredneaziat. Gosudarst. Univ., Tashkent). *Zhur. Fiz. Khim.* 26, 892-7 (1952).—Soly. of H_2O in $C_2H_4Cl_2$ was detd. between 19° (0.0857 wt.%) and 69° (0.515%). Soly. of $C_2H_4Cl_2$ in H_2O was, e.g., 0.877% at 23° and 1.380% at 72.5°. Over 50 ternary solys. were measured. E.g., EtOH 23.76, H_2O 76.24% dissolved 1.480% $C_2H_4Cl_2$ at 25°; EtOH 52.3, H_2O 47.7% dissolved 18.45% $C_2H_4Cl_2$ at 34°; EtOH 31.5, $C_2H_4Cl_2$ 68.5% dissolved 12.14% H_2O at 53°; and EtOH 10.6, $C_2H_4Cl_2$ 89.4% dissolved 1.07% H_2O at 44°. Also d. and *n* of many solns. at 30° and 40° and d. of solns. at 50° and 60° were detd. The compn. of conjugated layers is listed. Thus, at 30° the liquid H_2O 92.7, EtOH 6.3, $C_2H_4Cl_2$ 1.0% was in equil. with H_2O 0.5, EtOH 1.0, $C_2H_4Cl_2$ 98.5%, and 51.5, 39.5, 9.0% in equil. with 3.0, 13.0, 84.0%. At 40°, 88.8, 9.9, 1.3% was in equil. with 0.5, 2.2, 97.3%, and 30.0, 41.1, 19.9% with 7.0, 22.3, 70.7%. At 50° 80.8, 17.0, 2.2% was in equil. with 0.9, 4.2, 94.9%, and 41.7, 39.1, 19.2% with 7.2, 22.0, 70.8%. At 60° 90.1, 7.9, 2.0% was in equil. with 0.5, 1.8, 97.7%, and 41.0, 37.0, 12.0% with 7.7, 21.5, 70.8%. The calcd. compn. of the crit. solys. was at 30° H_2O 18.3, EtOH 34.3, $C_2H_4Cl_2$ 47.4%, at 40° 19.2, 32.9, 47.9%, and at 60° 19.6, 31.4, 49.0%.

J. J. Bikerman

UDOVENKO, V. V., FATKULINA, L. G.

Chemical Apparatus.

Apparatus for determination of pressure and composition of saturated vapor of layer-forming liquid systems. Zhur.fiz.khim. 26, no. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, September 1952 Unclassified.

UDOVENKO, V. V., FATKULINA, L. G.

Phase Rule and Equilibrium.

Vapor pressure of ternary systems. Part 1. System ethyl alcohol - 1, 2-dichloroethanebenzene. Zhur. fiz. khim. 26 no. 5, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1952. Unclassified.

1. UDOVENKO, V. V.: FATKULINA, L. G.

2. USSR (600)

4. Systems (Chemistry)

7. Vapor pressure of ternary systems. Part 2. System ethyl alcohol-1, 2-dichloroethane water. Zhur. fiz. khim. 26 no. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Uncl.

-Z...., V. V.,

FA 242T3

USSR/Chemistry - Ternary Systems

Nov 52

"The Equilibrium of Liquid-Liquid in a Ternary System," V. V. Udovenko and L. G. Fatkulina, Cent-Asian State U, Tashkent

"Zhur Fiz Khim" Vol 26, No 11, pp 1569-1572

The authors examined the eq of L. A. Rotinyan and showed that in the case of a paraboloidal curve of sepn in ternary systems, the nodes can be parallel to the side of the triangle when the liquid phases are in equil. On the basis of the above-mentioned eq, the authors concluded that the critical point of mutual soly in ternary systems can also be located at the vertex of the binodal curve of sepn.

242T3

UDOVENKO, V.V.; PASOVSKAYA, G.B.

Conductance method for the study of the adsorption of electrolytes. Trudy SAGU no.33:35-37 '52. (MLRA 9:5)

(Electrolytes) (Adsorption)

UDOVENKO, V.V.

USSR.

√Reaction of lupinine and diethylaminoethanol with copper chlorides. V. V. Udovenko and L. P. Aleksandrova (Central Asia State Univ., Tashkent). *Sbornik Statei Obshchei Khim.* 2, 1120-3(1953).—Lupinine and dry $CuCl_2$ in abs. EtOH form brown $C_{10}H_{18}NOH.CuCl_2$, decomp. 125°, which slowly decomposes on exposure to air. If twice the proportion of lupinine is used, there is obtained a green alcoholate $C_{10}H_{18}NOCuCl$ (I), m. 215° (from $ClCH_2CH_2Cl$), while the evapd. filtrate yields lupinine HCl salt, m. 211.5°. I also forms on mixing abs. EtOH soln. of lupinine with CuCl in contact with atm. O. Addn. of abs. EtOH soln. of $Et_2NCH_2CH_2OH$ to EtOH soln. of $CuCl_2$ gave green $Et_2NCH_2CH_2OCuCl$, m. 160° (from $ClCH_2CH_2Cl$), while evapn. of the soln. gave the amine HCl salt. Thus the original adduct is transformed into the alcoholate under action of excess amino alc., which results in loss of HCl and formation of I analog and amine HCl salt. G. M. Kosolapoff

UDOVENKO, V.V.

6

USSR

✓ Separation of mixture of alkaloids anabasine and lupinine. V. V. Udovenko, O. I. Granilova, and L. A. Vvedenskaya (Central Asia State Univ., Tashkent). *Sbornie Statei Obshchei Khim.* 2, 1124-6(1953).—The sepn. is performed through the Cu salts (cf. following abstr.) as follows. The mixt. of known compn. of anabasine and lupinine is treated with a highly concd. soln. of $CuCl_2$ and HCl or $Cu(NO_3)_2$ and HNO_3, made up on the basis of theoretical calcn. to form either $CuCl_2.A.2HCl$ or $Cu(NO_3)_2.2A.4HNO_3$ (A = anabasine), with cooling. The order of addn. is immaterial. Since the mixt. now contains a ppt. of Cu oxide, addnl. acid is added to dissolve this (avoid excess of HNO_3). Traces of kerosine from com. alkaloids are removed at this point by boiling. The mixt. then yields cryst. salt of anabasine, which treated with concd. NaOH gives the pure base, which is purified by distn. *in vacuo*. The evapd. filtrate from the salt is treated with concd. NaOH and extd. with C_6H_6. Evapn. of the ext. yields cryst. lupinine. The HCl salt gives somewhat better results. Pure *anabasine* b_4 107-10°, n_D^{20} 1.5420, d_{20} 1.0409; *lupinine* m. 69°. C. M. K.

UDOVENKO, V. V.

USSR.

Reaction of anabasine with salts of copper. V. V. Udovenko and O. I. Granitova (Central Asia State Univ., Tashkent). *Sbornik Statei Obshchei Khim.* 2, 1127-9 (1953).—Anabasine (A) forms 2 salts with $CuCl_2$ and HCl and with $CuBr_2$ and HBr, resp. With control of the reactant proportions there were obtained: yellow $CuCl_2.A.2HCl$, decomp. 205° (in aq. soln. this dissoc. into components on basis of cond. detns.); $CuCl_2.A.HCl$, green, decomp. 191-6° (completely dissoc. in aq. soln.); black $CuBr_2.A.2HBr$, decomp. 214°; red-brown $CuBr_2.A.HBr$, decomp. 157°. Similarly was obtained blue-violet $Cu(NO_3)_2.4A.4HNO_3$, decomp. 107°, and blue $CuSO_4.2A.H_2SO_4.10H_2O$, which loses all H_2O at 100°. All dissoc. in aq. solns.

G. M. Kosolapoff

AP

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UDOVENKO, V.V.

USSR 5

Interaction of anabasine with mercuric and mercurous chlorides. V. V. Udovenko, M. A. Azizov and E. I. [illegible]ov. *Doklady Akad. Nauk Uzbek. S.S.R.* 1953, No. 5, 38-41; *Referat. Zhur., Khim.* 1954, No. 27807. $HgCl_2$ reacted with anabasine (I) in aq. soln. to form a white amorphous compd. $HgCl_2.C_{10}H_{14}N_2$ (II), m. 311° (decompn.). The reaction proceeds with appreciable evolution of heat and unless cooled a colored compd. is obtained. II was obtained by adding dropwise an aq. soln. of I to an aq. soln. $HgCl_2$ cooled in ice water. Upon heating to 110° II turned yellow. It is nonhygroscopic, dissolves poorly in water (slightly better in hot water), acetone, and EtOH, insol. in benzene and toluene. After boiling, aq. solns. of II have an alk. reaction. II dissolves in I, liberating metallic Hg; addn. of Me_2CO hastens this reaction. In water acidified with AcOH or strong mineral acids II dissolved forming a compd. of different compn. Specifically aq. HCl formed $HgCl_2.C_{10}H_{14}N_2.2HCl$, acicular crystals. Hg_2Cl_2 (III) reacted with I according to: $Hg_2Cl_2 + C_{10}H_{14}N_2 \rightarrow Hg + HgCl_2.C_{10}H_{14}N_2$. A comparative study was made of the reaction of I, pyridine (IV), and piperidine (V) with III. The reactions were carried out with an excess of base in the absence of moisture. Immediately following the mixing, after 10 min., and after 7 days, the extent of interaction of I with III was 7, 9, and 16.0%, resp. For IV and III it was 30, 75.66, and 81.27%, and for V and III it was [illegible] and [illegible]%, resp. In the last case, no detn. was made after 7 days. Thus, in its action on dry III, I is closer to V than to IV. In the presence of water, the interaction of I or IV with III does not exceed 1%.

M. H.

V.S.

Udovenko, V.V.

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1
a

Interaction of anabasine with aluminum chloride and

Reaction of anabasine with organic acids. V. V. Udovenko and L. A. Vvedenskaya (Central Asia State Univ., Tashkent). *Zhur. Obshchei Khim.* 23, 1031-4(1953).—Anabasine (I) and HCO_2H yield crystalline I.HCO_2H, very hygroscopic and sol. in org. solvents. I and AcOH gave I.*AcOH*, m. 88°. $PrCO_2H$ similarly gave I.$PrCO_2H$, very hygroscopic solid. I and iso-$BuCO_2H$ gave I.iso-$BuCO_2H$, very hygroscopic solid. With $(CO_2H)_2$ there are formed: 2I.$C_2O_4H_2$, m. 210°, I.$C_2O_4H_2$, m. 109°, and I.2$C_2O_4H_2$, m. 81°; all are very sol. in the usual solvents. Malonic acid gave 2I.$C_3O_4H_4$, m. 66°. Succinic acid gave very hygroscopic 2I.$C_4O_4H_6$. Tartaric acid gave solid 2I.$C_4H_6O_6$. Citric acid gave solid 3I.$C_6H_8O_7$. With naphthalene-2-sulfonic acid there are formed: I.$C_{10}H_7SO_3H$, m. 139° and I.2$C_{10}H_7SO_3H$, m. 121°. G. M. Kosolapoff

UDOVENKO, V.V.

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001857820003-7"

Udovenko, V V

The strength of some bases in water and acetone

UDOVENKO, V. V.

4

USSR.

Heats of vaporization of three-component liquid mixtures. V. V. Udovenko and L. G. Fatkulina (Central Asia State Univ., Tashkent). *Zhur. Fiz. Khim.* 27, 1064-7(1953); cf. *C.A.* 47, 6748i.—The heats of vaporization (L) of ternary mixts. contg. 10-80 mole % EtOH (I) with varying proportions of benzene (II) and 1,2-dichloroethane (III) were calcd. by means of the Clausius-Clapeyron equation from exptl. data published earlier (*loc. cit.*). Values of L so calcd. agree within 1% or less on the av. with those calcd. by means of the equation $L = L_1y_1 + L_2y_2 + L_3y_3$, where L_i is the heat of vaporization of the ith component and y_i is its mole fraction in the gas phase. Both sets of values are tabulated. The equation $L = (L_1p_1\gamma_1x_1 + L_2p_2\gamma_2x_2 + L_3p_3\gamma_3x_3)/(p_1\gamma_1x_1 + p_2\gamma_2x_2 + p_3\gamma_3x_3)$, where p_i, γ_i, and x_i are the vapor pressure in the pure state, the activity coeff., and the mole fraction of the ith component in the liquid phase, resp. was derived. J. W. Loweberg, Jr.

1 9

LIDOVENKO, V. V.

USSR.

[illegible] ...metric titration of [illegible] anabasine and [illegible]

LIDOVENKO, I. V.

USSR

Viscosity of some binary systems with nicotine. I. V. Lidovenko and S. F. Babak. *Trudy Sredneaziat. Gosudarst. Univ., Khim. Nauki* 5, No. 40, 9-16 (1953); *Referat. Zhur., Khim.* 1954, No. 30288; cf. *C.A.* 45, 9334d, 46, 7860g.—The viscosity and d. of mixts. of nicotine with $CHCl_3$, $C_2H_4Br_2$, tetrachloroethane, EtOH, iso-BuOH, AmOH, and cyclohexyl alc. were studied at 25, 50, and 75° and of nicotine and MeOH at 25 and 50°. The nature of the relation between the viscosity values and molar compn. indicates interaction between nicotine and $CHCl_3$, ethylene bromide, tetrachloroethane, and Me, Et, and iso-Bu alcs. The interaction of these substances with nicotine indicates their acidic nature in relation to nicotine as a base. The viscosity isotherm of nicotine mixt. with cyclohexyl alc. shows no reaction between the two. The acidic properties of the halogen derivs. increase with the no. of halogen atoms in the mol. and increases also upon the replacement of Cl by Br. In the case of alcs., an increase in the length of the hydrocarbon chain attenuates their interaction with nicotine.

M. Hosch

UDOVENKO, V.V.

1842. Conductimetric titration of certain alkaloids. V. V. Udovenko and L. A. Vvedenskaya. *Ukr. Khim. Zh.*, 1954, 20 (6), 684-688.—By conductimetric titration with naphthalene-2-sulphonic acid in acetone solution, the alkaloids present in the following mixtures were separately determined: anabasine - lupinine, anabasine - nicotine, anabasine - nicotine - lupinine, also anabasine - lupinine in the presence of aphylline and aphyllidine. The method depends on the effect of acetone in increasing the difference between the ionisation constants of the bases. It can be applied to the determination of alkaloids in technical products. MD

F. W. Kirkbride

(2)

Vdovenko V.V.

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001857820003-7"

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001857820003-7"

UDOVENKO, V. V.

AUTHORS: Udovenko, V.V. and Fialkov, Yu. Ya. 5C1

TITLE: Viscosity of Germanium Tetrachloride - Ethers Systems. (Vyazkost' Sistem Chetyrekhkhloristyy Germaniy - Efiry).

PERIODICAL: "Zhurnal Neorganicheskoy Khimii" (Journal of Inorganic Chemistry Vol.II, No.2, pp.434-438 (U.S.S.R.). 1956

ABSTRACT: A study of the complex-forming ability of germanium tetrachloride would be useful in enabling a comparison to be made of the properties of various addition products of IV group element tetrahalides; the rules governing the formation of these products could also be deduced. In connection with this studies have been made of the viscosities of binary systems of which one component was always germanium tetrachloride, the others being various organic compounds. All materials were carefully dried to avoid hydrolysis of the tetrachloride.

Measurements were made of the viscosity and also the density of the following systems: germanium tetrachloride - acetoacetic - ester, germanium tetrachloride - anisole at 20, 30 and 40°C; germanium tetrachloride - dioxane at 25 and 40°C, and germanium tetrachloride - diethyl ether and germanium - tetrachloride - dimethyl sulphide at 20°C. It was found that in contrast to titanium and tin tetrachlorides, germanium tetrachloride does not form addition products with the above type of compounds; this is explained as being connected with the increase in the

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581

Viscosity of Germanium Tetrachloride - Ethers Systems. (Cont.)

screening of the central atom in germanium tetrachloride. There are thirty-one references, of which fifteen are Russian.

One Figure and Five Tables.

The work was carried out at Kiev Polytechnical Institute.

Received 17 September, 1956.

Card 2/2

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001857820003-7"

UDOVENKO, V.V.

Viscosity of binary systems with chloral. I. V. V. Udovenko and R. I. Khomenko [illegible] Viscosity and [illegible] of the system CCl_3CHO [illegible] at 25, 50 and [illegible], and of CCl_3CHO-cyclohexanol at 25 [illegible] 50° were detd. The systems show component interaction although a cryst adduct with cyclohexanol was the only definitely isolable product, in this case the viscosity isotherm has an irrational max. at 60 mole % aldehyde. An equimolar mixt. of components forms a 1:1 adduct, m. 64° (cf. Somerford and Cronic, *C.A.* 42, 2316e). The system with $PhCH_2OH$ failed to yield a cryst. adduct but gave a clear max. in the viscosity curve at 70 mole % alc. G. M. Kosolapoff

UDOVENKO, V. V.

7 Viscosity of binary systems from chloral. II. V. V. Udovenko and R. I. Klimenko [illegible] Zhur. Obshchei Khim. [illegible]

5306h [illegible] viscosity of the system [illegible] at [illegible] 60°, and 80°, and CCl_3CHO-o-MeC$_6$H$_4$OH [illegible] m-MeC$_6$H$_4$OH, and CCl_3CHO-p-MeC$_6$H$_4$OH at 25°, 50°, and 75°, was detd. There was indication that CCl_3CHO forms complexes with the 4 phenols that dissoc. into components when the temp. rises. The complexes [illegible] formed through H bonding and are not [illegible]. The system CCl_3CHO-PhOH yields a little $CCl_3CH(C_6H_4OH)_2$, m. 203°, owing to condensation under the influence of traces of HCl. Similarly a small amt. of 2,5-(HO)(Me)C_6H_3CH(OH)CCl_3, m. 147°, was isolated. The system of PhOH-CCl_3CHO shows an irrational viscosity max. at 25 mole % CCl_3CHO; this indicated a compd. $CCl_3CHO.3PhOH$; the system with o-cresol has an irrational max. that does not yield any rational component proportion; with m-cresol the system has an irrational max. at 33 mole % CCl_3CHO, as does that with p-cresol. O. M. Kosolapoff

2

UDOVENKO, V. V.

7 7 2 11

Viscosity of binary systems with chloral. III. V. V. Udovenko and R. [illegible] Central Asia State Univ., Tashkent and Polytech. Inst. [illegible] Viscosity and [illegible]

data for the [illegible] $MeCOPr-CCl_3CHO$ at 25 [illegible] 60°; $MeCOPr-CCl_3CHO$ at 65°, 75°, and 85° are tabulated, as well as CCl_3CHO at 25°, 50°, and 75°. The only evi- $MeCOEt-CCl_3CHO$ at 25°, 50°, and 75° [illegible]

UDOVENKO, V. V.

USSR/Physical Chemistry - Thermodynamics, Thermochemistry, Equilibria, Physical-Chemical Analysis, Phase Transitions. B-8

Abs Jour : Referat Zhur - Khimiya, No 1, 1958, 414

Author : V.V. Udovenko, Yu.Ya. Fialkov.

Inst : -

Title : Viscosity of Systems Germanium Tetrachloride - Ethers and Esters.

Orig Pub : Zh. neorgan. khimii, 1957, 2, No 2, 434-438

Abstract : The viscosity and density of binary systems composed by germanium tetrachloride (I) with ethyl acetate (II), anisole (III), dioxane (IV), diethyl ether (V) and dimemethylsulfide (VI) were measured. The systems I - II and I - III were studied at 20, 30 and 40°, the system I -IV was studied at 25 and 40°, and the systems I - V and I - VI were studied at 20°. All the operations of preparing the solutions and carrying out the measurements were done under airtight conditions. Viscosity was measured

Card 1/2

USSR/Physical Chemistry - Thermodynamics, Thermochemistry, Equilibria, Physical-Chemical Analysis, Phase Transitions. B-8

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 414

in a closed viscosimeter for volatile liquids described earlier (Toropov A.P., Zh. prikl. khimii, 1939, 12, 1744). The viscosity isotherms of the studied systems are convex with reference to the composition axis, which indicates the absence of a chemical interaction between the components. The authors connect the absence of interaction with an increase of the screening of the central atom in I.

Card 2/2

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001857820003-7"

446

AUTHORS: Udovenko, V. V., and Khomenko, R. I.

TITLE: Viscosity of Binary Systems with Chloral.4 (Vyazkost' binarnykh sistem s khloralem. IV.)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 1, pp. 37-40 (U.S.S.R.)

ABSTRACT: Investigations were conducted to determine the viscosity and density of binary systems consisting of chloral with acetophenone (boiling point 80.0° at 12 mm); benzophenone (b. p. 161.0° at 11 mm); benzaldehyde (b. p. 177.2° at 731 mm) and salicylaldehyde (b. p. 193.0° at 727 mm). The viscosity/density measurements were carried out at temperatures of 25, 50 and 75° and the results obtained are given in tables (for each mixture separately). The isothermal viscosity/density curves are either slightly convex or rectilinear, depending upon the temperature. None of the systems investigated showed any definite reactions between the components which could lead to the formation of any specific chemical compound.
Four tables. There are 5 references, of which 4 are Slavic.

Card 1/2

Viscosity of Binary Systems with Chloral.4

ASSOCIATION: Central Asiatic State University and the Kiev Polytechnicum (Sredneaziatskiy Gosudarstvennyy Universitet i Kiyevskiy Politekhnicheskiy Institut).

PRESENTED BY:

SUBMITTED: January 3, 1956

AVAILABLE:

Card 2/2

UDOVENKO, V. V.

79-2-9/58

AUTHORS: Udovenko, V. V., and Khomenko, R. I.

TITLE: Viscosity of Binary Systems with Chloral. Part 5. (Vyazkost' binarnykh sistem s khloralem. V.)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, vol 27, No 2, pp. 322-325 (U.S.S.R.)

ABSTRACT: In order to explain the nature of the reaction between chloral and ether, the authors investigated the viscosity and density of systems: chloral - ethyl formate, chloral - ethyl acetate, chloral-ethyl ether, chloral - anisole and chloral - acetoacetic ester at temperatures ranging from 25 to 75°. Viscosity was found to be constant in the first four systems and in the fifth one it varies with time. A reaction between the components was established in all systems investigated but only the reaction of the chloral-acetoacetic ester system is clearly expressed and this is explained by the presence in the molecule of the latter of a hydroxyl group.

It was established that acetoacetic ester in the presence of pyridine reacts with chloral forming a compound which during distillation in vacuum

Card 1/2

Viscosity of Binary Systems with Chloral. Part 5 79-2-9/58

decomposes into chloral and acetoacetic ester. Optical investigation of acetoacetic ester solutions in pyridine showed that the latter like alcohol, reacts with the pyridine by means of the hydroxyl group. Also the reaction between the chloral and the acetoacetic acid is due to this hydroxyl group of enol form.

4 tables, 1 graph. There are 2 references, of which 2 are Slavic.

ASSOCIATION: The Kiev Polytechnicum

PRESENTED BY:

SUBMITTED: January 25, 1956

AVAILABLE: Library of Congress

Card 2/2

UDOVENKO, [redacted]; KHOMENKO, R.I.

Viscosity of binary systems containing chloral. Part 6. Zhru. ob. khim. 27 no.3:583-585 Mr '57. (MIRA 10:6)

1. Sredneaziatskiy gosudarstvennyy universitet i Kievskiy politekhnicheskiy institut. (Systems (Chemistry)) (Chloral)

UDOVENKO, V. V.

USSR/Inorganic Chemistry. Complex Compounds. C

Abs Jour: Ref. Zhur-Khimiya, No 1, 1958, 677.

Author : Udovenko, V.V., Fialkov, Yu. Ya.
Inst : Kiev Polytech Inst.
Title : Interaction of Silicon Tetrachloride with Acetic and Benzoic Anhydrides.

Orig Pub: Zh. Obshch. Khimii, 1957, 27, No 4, 905-906.

Abstract: It was established that $SiCl_4$ can interact directly with anhydrides of organic acids thereby forming mixed anhydrides of organic and orthosilicic acids. This reaction proceeds under less rigid conditions than the reactions of interaction of $SiCl_4$ with corresponding acids. By means of the above reaction the tetraacetate and tetrabenzoate of silicon were obtained in good yields.

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AUTHORS: Udovenko, V. V., Fialkov, Yu. Ya. 79-28-3-54/61

TITLE: The Viscosity of Binary Systems With a Substitution Reaction (Vyazkost' dvoynykh sistem s obmennym vzaimodeystviyem)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 3, pp. 814-818 (USSR)

ABSTRACT: The viscosity diagrams of binary systems are to a great extent systematized at present and are often used for the explanation of the occurring processes. When systems with chemical reactions are considered the present classification (Ref. 1) provides diagram types for such systems in which chemical reactions take place with a decrease of the molecular number, e. g. in the system water-chloral, or for systems in which the molecular number does not change, e. g. in the system acetic anhydride-water. Such systems have been little investigated. Therefore N. A. Trifonov suggested such model systems as, among other, diethyl-water, systems conducive to visualization of the type of the diagram of viscosity when only

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one chemical compound without a decrease of the molecular number is formed. It must be noted that in the system acetic anhydride-water the number of molecules remains the same after the chemical reaction had taken place as two molecules of acetic acid are formed from the molecules of this anhydride and water. The reaction leading to the formation of a chemical compound is not the only possible one for reactions where the molecular number remains unchanged. Not less frequent is the substitution reaction where the final products are two chemical compounds. Systems of this kind are of great interest for the theory of physical and chemical analysis; they have, however, not been investigated by any chemical scientist with respect to the viscosity method. Below, data on the viscosity of systems are mentioned in which one component is silicontetrachloride and the other one of the following compounds: methylal (dimethoxymethane), acetal (1,1-diethoxyethane) and acetic anhydride. According to the methods of viscosity and density the binary systems silicontetrachloride-methylal at 20 and 30 °C, silicontetrachloride-acetal at 20, 30 and 40 °C and silicontetrachloride-acetic acid anhydride in benzene

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as indifferent medium at 20°C were investigated. The authors found that in the reaction of silicontetrachloride with methylal the final products are: dichlorodimethoxysilane and chlorodimethylether, and with acetal: dichloroethoxysilane and chlorodiethylether. This reaction represents a new method of the synthesis of dichlorodialkoxysilane which differs from the existing ones by its good yield and by the purity of the products. There are 1 figure, 3 tables and 5 references, 4 of which are Soviet.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiyev Polytechnical Institute)

SUBMITTED: March 3, 1957.

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AUTHORS: Udovenko, V. V., Aleksandrova, L. P. SOV/76-32-8-26/37

TITLE: The Solubility in the System Formic Acid - 1,2-Dichloro Ethane - Water (Rastvorimost' v sisteme murav'inaya kislota - 1,2-dikhloretan - voda)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 8, pp. 1889-1892 (USSR)

ABSTRACT: The mutual solubility in the above mentioned ternary system was investigated within the temperature range of from 20 to 70° according to the polythermal method by V. F. Alekseyev. The data of the mutual solubility of water and dichloro ethane were taken from other publications. In the determinations of the solubility eight polythermal lines were taken at different constant ratios between formic acid and dichloro ethane, and the results obtained were given in a table. There exists a greater laminated section in the system which decreases on an increase in temperature. For determining the intersections in the system the compositions of the layers of equilibrium were determined by a titration of the acid in both layers at 30, 45 and 60°C. The kinetic points of the mutual solubility on the curves of the separation of layers were determined according

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to the method mentioned above. The coefficients of distribution were calculated. The difference observed between the system $H_2O-C_2H_5OH-C_2H_4Cl_2$ and that investigated was explained by the greater coefficient of distribution of formic acid as compared to that of ethanol. There are 5 tables and 3 references, 2 of which are Soviet.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiyev Polytechnical Institute)

SUBMITTED: March 25, 1957

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5(4) SOV/78-4-2-17/40

AUTHORS: Udovenko, V. V., Artemenko, M. V.

TITLE: On the Interaction of Copper Chloride With Monoethanolamine (O vzaimodeystvii khlornoy medi s monoetanolaminom)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 2, pp 352-355 (USSR)

ABSTRACT: On the interaction of monoethanolamine with copper salts complex compounds of various compositions are formed. The following compounds are formed by copper chloride with ethanol amine combined with hydrochloric acid: $[CH_2OHCH_2NH_3]CuCl_3$ and $(CH_2OHCH_2NH_3)_2 \cdot CuCl_4$. On the interaction of a concentrated alcoholic solution of copper chloride with monoethanol amine the compounds $CH_2NH_2CH_2OCuCl$ and $(CH_2OHCH_2NH_3)CuCl_3$ are formed. In weak solutions of copper chloride in acetone the compound $Cu(CH_2OHCH_2NH_2)_4Cl_2$ is formed. This compound crystallizes in well formed blue crystals whose melting point is 103°; it is soluble in alcohol and water, and insoluble in acetone. On the interaction of copper chloride with $Cu(CH_2OHCH_2NH_2)_4Cl_2$

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